(2)

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2000-278628

(43)Date of publication of application : 06.10.2000

(51)Int.Cl. H04N 5/60
H04M 1/00
H04M 11/02
H04N 5/44

(21)Application number : 11-077606

(22)Date of filing : 23.03.1999

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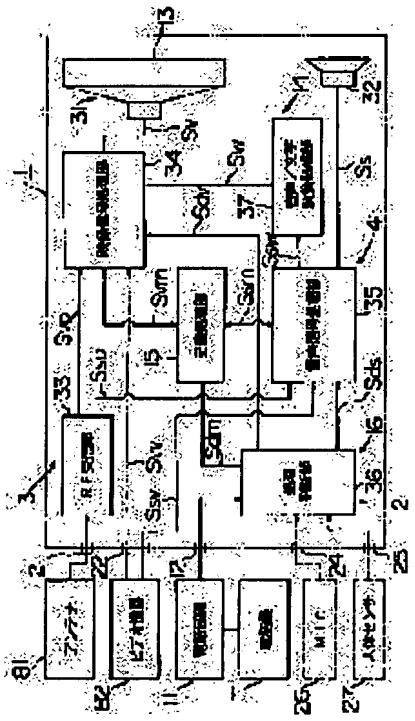
(54) RECEIVER

(57)Abstract:

PROBLEM TO BE SOLVED: To surely avoid a bothering audio signal of a television receiver to a phone call even on the occurrence of the phone call while a user views the television and to eliminate a trouble that the phone call is interrupted when viewing a television program.

SOLUTION: This television receiver is provided with a telephone set state detection section 2 that detects a state of a telephone set T and with a signal processing section 4 that processes a volume reduction of an audio signal in a television basic function section 3 in an ON state when the telephone set state detection section 2 detects the arrival of an incoming call to the telephone set T or start of the use of the telephone set T and processes the sound volume to be restored to a state before the use of the telephone set T is started when detecting the end of the use of the telephone set T.



LEGAL STATUS

[Date of request for examination] 13.02.2006

[Date of sending the examiner's decision of

rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]

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CLAIMS

[Claim(s)]
[Claim 1] The receiving set characterized by to have the signal-processing section which performs the processing to which said sound volume returns to the condition before the beginning of using of said telephone if use termination of said telephone detects while performing the processing to which the sound volume of the voice in the television basic function section of an ON state is reduced, if the telephone condition detecting element which detects the condition of telephone, and this telephone condition detecting element detect the arrival or the beginning of using of said telephone.
[Claim 2] Said telephone condition detecting element is a receiving set according to claim 1 characterized by detecting use termination of said telephone while detecting the arrival or the beginning of using of said telephone from the line signal of the telephone line which has the line connection section which connects the telephone line, and connected with this line connection section.
[Claim 3] Said signal-processing section is a receiving set according to claim 1 characterized by having the character representation function part which displays the reduced voice concerned on the screen of the television basic function section in an alphabetic character based on having reduced said sound volume.
[Claim 4] Said character representation function part is a receiving set according to claim 3 characterized by changing the reduced sound signal concerned in the period to which said sound volume was reduced into alphabetic data, and displaying on said screen based on this alphabetic data.
[Claim 5] Said signal-processing section is a receiving set according to claim 1 characterized by to have the storage processing section which memorizes the image data concerning the video signal corresponding to the voice data concerning the reduced sound signal concerned in the period to which said sound volume was reduced, and/or the sound signal concerned, and the regeneration function part which reads the voice data and/or the image data which were memorized in the storage processing section concerned, and is reproduced by said television basic function section.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention] This invention relates to the receiving set by which the television basic function section (body of a television receiver) is controlled corresponding to the condition of telephone.
[0002]
[A background and a technical problem] At ordinary homes etc., if a television receiver is in a condition as it is when the telephone call has been got during viewing and listening of a television receiver, it is not rare for the voice of a television receiver to become obstructive and to cause trouble to reception of a telephone, either.
[0003] For example, when telephone is put on rooms, such as the same living as a television receiver, or when the so-called telephone is far, with the voice of a television receiver, a partner's voice cannot be caught, but trouble is made to a partner as a result, or the problem which hears important business wrong is produced (when a partner's voice is small). Especially this problem is no longer avoided from it becoming impossible to operate a television receiver by appearing in a telephone, when viewing and listening to a television receiver by one person.
[0004] Moreover, for the viewer who appeared in the telephone, during reception of a telephone, since viewing and listening of a television receiver will be interrupted, the problem which overlooks a program to watch by telephone got suddenly is also produced.
[0005] This invention solves the technical problem based on such a background, and even if it is the case where the telephone call has been got during viewing and listening of a television receiver, while the voice of a television receiver can avoid certainly the fault which becomes obstructive, it aims at offer of the receiving set which enabled it to cancel the fault accompanying viewing and listening of a television receiver being interrupted.
[0006]
[The means for solving a technical problem and the gestalt of operation] If the receiving set 1 concerning this invention detects the arrival (call initiation is included) or the beginning of using of Telephone T by the telephone condition detecting element 2 which detects the condition of Telephone T, and this telephone condition detecting element 2 While performing processing to which the sound volume of the voice in the television basic function section 3 of an ON state is reduced If use termination (it includes that a call stops before starting to use Telephone T, after the call by arrival of the mail and) of Telephone T is detected, it will be characterized by having the signal-processing section 4 which performs processing to which sound volume is returned to the condition before the beginning of using of Telephone T.
[0007] In this case, according to the gestalt of suitable operation, the telephone condition detecting element 2 has the line connection section 12 which connects the telephone line 11, and it detects use termination of Telephone T while it detects the arrival or the beginning of using of Telephone T from the line signal of the telephone line 11 linked to this line connection section 12. Moreover, this character representation function part 14 changes the reduced sound signal Ssw concerned in the period to which

sound volume was reduced into alphabetic data Dw, and the signal-processing section 4 displays on Screen 13 based on this alphabetic data Dw while being equipped with the character representation function part 14 which displays the reduced voice concerned on Screen 13 of the television basic function section 3 in the alphabetic character W based on having reduced sound volume. Furthermore, the signal-processing section 4 is equipped with the storage processing section 15 which memorizes the image data concerning the video signal Svm corresponding to the voice data concerning the reduced sound signal Ssm concerned in the period to which sound volume was reduced, and/or the sound signal Ssm concerned, and the regeneration function part 16 which reads the voice data and/or image data which were memorized in the storage processing section 15 concerned, and is reproduced by the television basic function section 3.

[0008] Thereby, while performing automatically processing to which the sound volume of voice [in / in the signal-processing section 4 / the television basic function section 3 of an ON state] if the telephone condition detecting element 2 detects the arrival or the beginning of using of Telephone T is reduced, if the telephone condition detecting element 2 detects use termination of Telephone T, the signal-processing section 4 will perform automatically processing to which sound volume is returned to the condition before the beginning of using of Telephone T. Therefore, even if it is the case where the telephone call has been got during viewing and listening of the television basic function section 3, while the fault to which the voice of the television basic function section 3 becomes obstructive is avoided, even if it is under viewing and listening, it can know having got the telephone call certainly. The character representation function part 14 which displays the reduced voice concerned on the signal-processing section 4 on Screen 13 of the television basic function section 3 in the alphabetic character W on the other hand based on having reduced sound volume is formed. If it is made to display on Screen 13 based on this alphabetic data Dw while changing the reduced sound signal Ssw concerned in the period to which sound volume was reduced into alphabetic data Dw, other viewers who have not appeared in the viewer and telephone in a telephone can check the audio contents by viewing. Furthermore, the storage processing section 15 which memorizes the image data concerning the video signal Svm corresponding to the voice data concerning the reduced sound signal Ssm concerned in the period which reduced sound volume in the signal-processing section 4, and/or the sound signal Ssm concerned, If the regeneration function part 16 which reads the voice data and/or image data which were memorized in the storage processing section 15 concerned, and is reproduced by the television basic function section 3 is formed, it can view and listen to the contents of the voice interrupted in the telephone after telephone termination, and/or the image.

[0009]

[Example] Next, the suitable example concerning this invention is given and it explains to a detail based on a drawing.

[0010] First, the configuration of the receiving set 1 concerning this example is explained with reference to drawing 1 - drawing 5 . In addition, drawing 1 shows the whole receiving set 1 configuration, and drawing 2 - drawing 5 show the configuration of each part, respectively.

[0011] Among drawing 1 , one is a receiving set and this receiving set 1 contains the television basic function section 3 equivalent to the function of the common body of a television receiver, and the attached circuit part which is attached according to this invention. Moreover, a receiving set 1 is equipped with various connections. 21 is an antenna connection and connects an antenna 81 to this antenna connection 21. 22 is a video equipment connection and connects video equipment (VTR, DVD, etc.) 82 to this video equipment connection 22. Furthermore, it has the line connection section 12 and the telephone line 11 is connected to this line connection section 12. Thereby, the beginning of using (arrival of the mail) or use termination of Telephone T is detectable from the line signal of the telephone line 11. Moreover, it has two or more auxiliary input sections 24 and 25, a microphone (sense-of-pitch sensor) 26 is connected to the auxiliary input section 24, and the body sensor 27 is connected to the auxiliary input section 25. In addition, the same auxiliary input section is prepared and a gas sensor, a fire detector, etc. can be connected.

[0012] On the other hand, the television basic function section 3 outputs voice from loudspeaker 32 --

while displaying an image on Screen 13 of a display (Braun tube) 31 based on the input from an antenna 81 and video equipment 82. Therefore, in the receiving set 1 shown in drawing 1 , the RF receive section 33, the video-signal processing section 34, and the sound signal processing section 35 constitute the television basic function section 3. On the other hand, in a receiving set 1, as for the processing decision section and 15, 36 is [the storage processing section and 37] the voice-transliteration processing sections, and these constitute the attached circuit part which is attached according to this invention with a part of video-signal processing section 34 and sound signal processing section 35.

[0013] Moreover, the video-signal processing section 34 is equipped with the input change-over switch 51, the this image / alphabetic character information-separator section 52, the alphabetic character video-signal generation section 53, the first superposition processing section 54, the second superposition processing section 55, the decision section 56, the output change-over switch 57, and the video output section 58 as shown in drawing 2 . Furthermore, as shown in drawing 3 , while the sound signal processing section 35 is equipped with the input change-over switch 61 and the magnification processing sections 62, 63, and 64, the voice-transliteration processing section 37 is equipped with the speech recognition section 71 and the alphabetic character image generation section 72 as shown in drawing 4 . Moreover, the processing decision section 36 equips the speech recognition section 43 with reference data memory 43m while being equipped with the speech recognition section 43 and the logic seal step 44 linked to the input side of the telephone condition detecting element 2, two or more level detecting elements 41 and 42, and the level detecting element 41, the memory control signal output section 45, the image control signal output section 46, and the voice control signal output section 47, as shown in drawing 5 .

[0014] A function including the connection condition of each circuit block shown in drawing 1 - drawing 5 is explained together with actuation of the receiving set 1 mentioned later. In addition, any of hardware and software may realize the function of such each circuit block.

[0015] Next, actuation of an attached circuit part is especially explained according to the receiving set 1 concerning this example, and the flow chart shown in drawing 6 , referring to drawing 1 - drawing 5 , and drawing 7 .

[0016] Now, the electric power switch of a receiving set 1 is turned ON, and a viewer assumes the condition of viewing and listening to the image and voice based on the television basic function section 3. In this case, the RF signal received with the antenna 81 is amplified and detected by the RF receive section 33, and a video signal Svo and a sound signal Sso are taken out. A video signal Svo is given to the video-signal processing section 34 as shown in drawing 2 . The input change-over switch 51 with which the video-signal processing section 34 is equipped is switched to the position which incorporates a video signal Svo, and the output change-over switch 57 is switched to the position which outputs this video signal Svx from this image / alphabetic character information-separator section 52 as it is. This image / alphabetic character information-separator section 52 is circuits which separate the alphabetic character information signal Svw for teletexts sent together with this video signal Svx and this video signal Svx of this from a video signal Svo. Therefore, this video signal Svx separated by this image / alphabetic character information-separator section 52 is given to the video output section 58 through the output change-over switch 57, and the image based on the video signal Sv processed by the video output section 58 is displayed on Screen 13 of a display 31.

[0017] On the other hand, the alphabetic character information signal Svw outputted from this image / alphabetic character information-separator section 52 is given to the alphabetic character video-signal generation section 53. Thereby, while the alphabetic character video-signal generation section 53 generates the text video signal Stw, this text video signal Stw is given to the first superposition processing section 54. The first superposition processing section 54 superimposes this video signal Svx and the text video signal Stw, and generates the first superposition video signal Sa, and this first superposition video signal Sa is given to the output change-over switch 57. In addition, it is switched by the change-over signal Sca outputted by pressing the predetermined selection key with which the remote control 91 shown in drawing 7 is equipped, and, as for the input change-over switch 51, the video signal Svm based on the image data read from the storage processing section 15 which is given by this input

change-over switch 51 from the video signal Svo and the video equipment connection 22 from the RF receive section 33, and which it video-signal-Svv(s) or is mentioned later is incorporated alternatively.
[0018] On the other hand, a sound signal Sso is given to the sound signal processing section 35 shown in drawing 3 . The input change-over switch 61 with which the sound signal processing section 35 is equipped is switched to the position which incorporates a sound signal Sso, and the sound signal Sso concerned is given to the input side of the magnification processing sections 62, 63, and 64. And the amplified sound signal Ss which is outputted from the magnification processing section 64 is given to loudspeaker 32 --, and is outputted as voice. The input change-over switch 61 interlocks, and is switched to the input change-over switch 51, and the sound signal Ssm based on the voice data read from the storage processing section 15 which is given by this input change-over switch 61 from the sound signal Sso and the video equipment connection 22 from the RF receive section 33, and which it sound-signal-Ssv(s) or is mentioned later is incorporated alternatively. In addition, Scb is a change-over signal which switches the input change-over switch 61. On the other hand, while the amplified sound signal Ssm which is outputted from the magnification processing section 62 is given to the storage processing section 15, the amplified sound signal Ssw which is outputted from the magnification processing section 63 is given to the voice-transliteration processing section 37.
[0019] therefore, the television signal (a video signal and sound signal) given from an antenna 81 or video equipment 82 when viewing and listening to a receiving set 1 in the usual condition -- as it is -- graphic display -- and a voice output is carried out.
[0020] Next, the case where the telephone call has been got under such a situation is assumed. In this case, a viewer can appear in a telephone ordinarily, without operating a receiving set 1. The telephone condition detecting element 2 with which the processing decision section 36 shown in drawing 5 is equipped on the other hand detects the beginning of using (arrival of the mail) of Telephone T based on the line signal of the telephone line 11 (steps S1 and S2). Thereby, a detecting signal Sd outputs from the telephone condition detecting element 2 (step S3), and this detecting signal Sd is given to the memory control signal output section 45, the image control signal output section 46, and the voice control signal output section 47 through the logic seal step 44, respectively.
[0021] Consequently, by giving a detecting signal Sd, the voice control signal output section 47 outputs the voice control signal Sds, and performs processing to which the sound volume of the voice in the television basic function section 3 of an ON state is reduced by giving the sound signal processing section 35 shown in drawing 3 (step S4). That is, the voice control signal Sds is given to the magnification processing section 64 with which the sound signal processing section 35 is equipped, and the signal level of the sound signal Ss outputted from the magnification processing section 64 falls by changing the amplification degree of the magnification processing section 64. In addition, also when muffling reducing sound volume, it contains.
[0022] Therefore, trouble is made to a partner, without the voice of a receiving set 1 becoming obstructive during reception of a telephone, for example, being able to catch a partner's voice, even if it is the case where the telephone call has been got during viewing and listening of a receiving set 1, or the problem of hearing important business wrong is avoided certainly. In this case, since the sound volume of the voice in the television basic function section 3 falls before appearing in the got telephone, a viewer can know having got the telephone call certainly.
[0023] Moreover, the amplified sound signal Ssw which is outputted from the magnification processing section 63 is given to the speech recognition section 71 with which the voice-transliteration processing section 37 shown in drawing 4 is equipped. Thereby, the speech recognition section 71 changes voice into alphabetic data Dw by analyzing Recognition Ssw, i.e., a sound signal, and this alphabetic data Dw is changed into the alphabetic character video signal Sw by being given to the alphabetic character image generation section 72. And while this alphabetic character video signal Sw is given to the second superposition processing section 55 of the video-signal processing section 34 shown in drawing 2 and this video signal Svx is overlapped, the second superposition video signal Sb outputted from the second superposition processing section 55 is given to the output change-over switch 57.
[0024] On the other hand, by receiving a detecting signal Sd, the image control signal output section 46

outputs the image control signal Sdv, and gives it to the decision section 56 with which the video-signal processing section 34 shown in drawing 2 is equipped. Moreover, the distinction signal Sj concerning the existence of text is given to this decision section 56 from the alphabetic character video-signal generation section 53. The decision section 56 outputs the change-over signal Scc based on the image control signal Sdv and the distinction signal Sj, and switches the output change-over switch 57. The second superposition video signal Sb which the alphabetic character video signal Sw superimposed on the first superposition video signal Sa or this video signal Svx which the text video signal Stw superimposed on this video signal Svx mentioned above and this video signal Svx is given to the output change-over switch 57, and it is alternatively outputted to it by the change of the output change-over switch 57.

[0025] If a setup which gives priority to the text video signal Stw (the first superposition video signal Sa) is performed as opposed to the decision section 56, therefore, the decision section 56 If the distinction signal Sj is judged and there is text from the alphabetic character video-signal generation section 53 when the image control signal Sdv is given While outputting the change-over signal Scc switched to the position which the first superposition video signal Sa outputs to the output change-over switch 57 If there is no text from the alphabetic character video-signal generation section 53, the change-over signal Scc switched to the position which the second superposition video signal Sb outputs to the output change-over switch 57 will be outputted. Of course, a setup which gives priority to the alphabetic character video signal Sw (the second superposition video signal Sb) can also be performed.

[0026] Thereby, as shown in drawing 7 , the alphabetic character [in / Screen 13 of the display 31 on which this image is displayed] W based on the alphabetic character video signal Sw or the text video signal Stw to the lower part is displayed (step S5). Generation of such the alphabetic character video signal Sw and the text video signal Stw and the display of the alphabetic character W further based on this will be a function based on the character representation function part 14. In addition, as a display of the alphabetic character W, various display modes, such as presenting of all information, a display of only language, and a display that shortened language (epitome), are contained.

[0027] Therefore, the viewer under reception to a telephone and other viewers who have not appeared in a telephone while being able to see the alphabetic character W corresponding to voice can see the alphabetic character W concerned by the function of such a character representation function part 14 under the condition to which sound volume fell (silence). Therefore, the fault which overlooks a program to watch by telephone got suddenly is canceled.

[0028] By receiving a detecting signal Sd, the memory control signal output section 45 outputs the memory control signal Sdm, and memorizes the image data concerning the video signal Svm corresponding to the voice data concerning the sound signal Ssm in the period to which sound volume was reduced, and the sound signal Ssm concerned in the memory of the storage processing section 15 by giving the storage processing section 15 further again (step S6). In this case, the video signal in the period to which sound volume was reduced may be memorized as it is, in order to avoid that memory space becomes large, the frame (still drawing) of a fixed time interval may be memorized, and data compression processing may be performed and memorized.

[0029] And if a telephone is completed and it carries out on hook [of the telephone T], the telephone condition detecting element 2 will detect use termination of Telephone T from the line signal of the telephone line 11. Consequently, from the telephone condition detecting element 2, the detecting signal Sd based on detection of use termination outputs, and this detecting signal Sd is given to the memory control signal output section 45, the image control signal output section 46, and the voice control signal output section 47 through the logic seal step 44. Therefore, the memory control signal Sdm, the image control signal Sdv, and the voice control signal Sds based on detection of use termination of Telephone T are outputted, and the processing to which sound volume is returned to the condition before detection of the beginning of using (arrival of the mail) is made to perform from the storage control signal output part 45, the image control signal output section 46, and the voice control signal output section 47. (Steps S7 and S8) . That is, the amplification degree of the magnification processing section 64 is changed into the original condition, and while the output change-over switch 57 is switched to the position which

only this video signal Svx outputs, processing which stops the store of the image data and voice data to the storage processing section 15 is performed.
[0030] In this case, the data memorized in the storage processing section 15 are held. If the playback key 92 with which the remote control 91 which follows, for example, is shown in drawing 7 after program termination in commercials is equipped was pressed, after the image data concerning the voice data concerning the sound signal Ssm memorized in the storage processing section 15 by switching the input change-over switches Sca and Scb and a video signal Svm will be read and being changed into a sound signal Ssm and a video signal Svm, the television basic function section 3 is reproduced. The graphic display and the voice output by the data memorized in such the storage processing section 15 serve as a function based on the regeneration function part 16. Therefore, the fault accompanying viewing and listening of a receiving set 1 being interrupted is canceled, and convenience is raised more, such as overlooking a program watching by telephone got suddenly.
[0031] On the other hand, a microphone 26 is connected to the auxiliary input section 24, and it enabled it for this microphone 26 to detect the ringing tone of Telephone T, the chime of an interphone, a viewer's command voice, etc. in the example. The ringing tone of Telephone T, the chime of an interphone, a viewer's command voice, etc. are more desirably registered into reference data memory 43m built in the speech recognition section 43 as reference data beforehand. Actually in this case, with a microphone 26 What is necessary is just to detect the ringing tone of the telephone T concerned, the chime of an interphone, a viewer's command voice, etc. as compared with the registered reference data, if the ringing tone of Telephone T, the chime of an interphone, a viewer's command voice, etc. are sensed. In instantiation, when the telephone line 11 cannot be connected, while detection of the ringing tone of Telephone T can detect the beginning of using, a viewer's command voice can detect use termination, when the telephone line 11 cannot be connected. Moreover, the chime of an interphone can make the same processings as the case of said telephone T, such as detecting a visitor and reducing the sound volume of a receiving set 1, perform, when the distance of a receiving set 1 and the door is near like an one-room system apartment house. Therefore, detection of a visitor can install the body sensor 27 near the door, and can also be performed by connecting this body sensor 27 to the auxiliary input section 25. Furthermore, when the same auxiliary input section is prepared and a gas sensor, a fire detector, etc. are connected, according to sensing results, such as a gas sensor and a fire detector, it registered beforehand, for example, an alphabetic character, such as "being gas leakage", can be displayed on Screen 13 like said alphabetic character W. The alphabetic data in this case is storable in a part of storage area in the storage processing section 15.
[0032] As mentioned above, although the example was explained to the detail, this invention is not limited to such an example, and can be changed, added and deleted to arbitration in the configuration of details, technique, etc. in the range which does not deviate from the summary of this invention. For example, the input to the auxiliary input section may be given from home use LAN etc. Furthermore, the voice data and image data which are memorized in the storage processing section 15 may be only either.

[0033]
[Effect of the Invention] Thus, since it will be equipped with the signal-processing section which performs the processing to which sound volume returns to the condition before the beginning of using of telephone if it detects use termination of telephone while it will perform the processing to which the sound volume of the voice in the television basic function section of an ON state reduces, if the receiving set concerning this invention detects the arrival or the beginning of using of telephone by the telephone condition detecting element which detects the condition of telephone, and this telephone condition detecting element, it does the following remarkable effectiveness so.
[0034] ** Trouble can be made to a partner, without the voice of a receiving set becoming obstructive during reception of a telephone, for example, being able to catch a partner's voice, even if it is the case where the telephone call has been got during viewing and listening of a receiving set, or the problem of hearing important business wrong can be avoided certainly.
[0035] ** If the character representation function part which displays the reduced voice concerned on

the signal-processing section on the screen of the television basic function section in an alphabetic character based on having reduced sound volume is prepared according to the gestalt of suitable operation Since the viewer under reception to a telephone and other viewers who have not appeared in a telephone while being able to see the alphabetic character corresponding to voice can see the alphabetic character concerned under the condition to which sound volume fell (silence), the fault which overlooks a program to watch by telephone got suddenly is cancelable.

[0036] ** The storage processing section which memorizes the image data concerning the video signal corresponding to the voice data applied to the reduced sound signal concerned in the period which reduced sound volume in the signal-processing section according to the gestalt of suitable operation, and/or the sound signal concerned, If the regeneration function part which reads the voice data and/or image data which were memorized in the storage processing section concerned, and is reproduced by the television basic function section is prepared For example, it can view and listen to the program part interrupted when the telephone call had been got in commercials and after program termination, and convenience can be raised more.

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TECHNICAL FIELD

[Field of the Invention] This invention relates to the receiving set by which the television basic function section (body of a television receiver) is controlled corresponding to the condition of telephone.

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EFFECT OF THE INVENTION

[Effect of the Invention] Thus, since it will be equipped with the signal-processing section which performs the processing to which sound volume returns to the condition before the beginning of using of telephone if it detects use termination of telephone while it will perform the processing to which the sound volume of the voice in the television basic function section of an ON state reduces, if the receiving set concerning this invention detects the arrival or the beginning of using of telephone by the telephone condition detecting element which detects the condition of telephone, and this telephone condition detecting element, it does the following remarkable effectiveness so.
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[0035] ** If the character representation function part which displays the reduced voice concerned on the signal-processing section on the screen of the television basic function section in an alphabetic character based on having reduced sound volume is prepared according to the gestalt of suitable operation Since the viewer under reception to a telephone and other viewers who have not appeared in a telephone while being able to see the alphabetic character corresponding to voice can see the alphabetic character concerned under the condition to which sound volume fell (silence), the fault which overlooks a program to watch by telephone got suddenly is cancelable.
[0036] ** The storage processing section which memorizes the image data concerning the video signal corresponding to the voice data applied to the reduced sound signal concerned in the period which reduced sound volume in the signal-processing section according to the gestalt of suitable operation, and/or the sound signal concerned, If the regeneration function part which reads the voice data and/or image data which were memorized in the storage processing section concerned, and is reproduced by the television basic function section is prepared For example, it can view and listen to the program part interrupted when the telephone call had been got in commercials and after program termination, and convenience can be raised more.

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TECHNICAL PROBLEM

[A background and a technical problem] At ordinary homes etc., if a television receiver is in a condition as it is when the telephone call has been got during viewing and listening of a television receiver, it is not rare for the voice of a television receiver to become obstructive and to cause trouble to reception of a telephone, either.
[0003] For example, when telephone is put on rooms, such as the same living as a television receiver, or when the so-called telephone is far, with the voice of a television receiver, a partner's voice cannot be caught, but trouble is made to a partner as a result, or the problem which hears important business wrong is produced (when a partner's voice is small). Especially this problem is no longer avoided from it becoming impossible to operate a television receiver by appearing in a telephone, when viewing and listening to a television receiver by one person.
[0004] Moreover, for the viewer who appeared in the telephone, during reception of a telephone, since viewing and listening of a television receiver will be interrupted, the problem which overlooks a program to watch by telephone got suddenly is also produced.
[0005] This invention solves the technical problem based on such a background, and even if it is the case where the telephone call has been got during viewing and listening of a television receiver, while the voice of a television receiver can avoid certainly the fault which becomes obstructive, it aims at offer of the receiving set which enabled it to cancel the fault accompanying viewing and listening of a television receiver being interrupted.
[0006]
[The means for solving a technical problem and the gestalt of operation] If the receiving set 1 concerning this invention detects the arrival (call initiation is included) or the beginning of using of Telephone T by the telephone condition detecting element 2 which detects the condition of Telephone T, and this telephone condition detecting element 2 While performing processing to which the sound volume of the voice in the television basic function section 3 of an ON state is reduced If use termination (it includes that a call stops before starting to use Telephone T, after the call by arrival of the mail and) of Telephone T is detected, it will be characterized by having the signal-processing section 4 which performs processing to which sound volume is returned to the condition before the beginning of using of Telephone T.
[0007] In this case, according to the gestalt of suitable operation, the telephone condition detecting element 2 has the line connection section 12 which connects the telephone line 11, and it detects use termination of Telephone T while it detects the arrival or the beginning of using of Telephone T from the line signal of the telephone line 11 linked to this line connection section 12. Moreover, this character representation function part 14 changes the reduced sound signal Ssw concerned in the period to which sound volume was reduced into alphabetic data Dw, and the signal-processing section 4 displays on Screen 13 based on this alphabetic data Dw while being equipped with the character representation function part 14 which displays the reduced voice concerned on Screen 13 of the television basic function section 3 in the alphabetic character W based on having reduced sound volume. Furthermore, the signal-processing section 4 is equipped with the storage processing section 15 which memorizes the

image data concerning the video signal Svm corresponding to the voice data concerning the reduced sound signal Ssm concerned in the period to which sound volume was reduced, and/or the sound signal Ssm concerned, and the regeneration function part 16 which reads the voice data and/or image data which were memorized in the storage processing section 15 concerned, and is reproduced by the television basic function section 3.

[0008] Thereby, while performing automatically processing to which the sound volume of voice [in / in the signal-processing section 4 / the television basic function section 3 of an ON state] if the telephone condition detecting element 2 detects the arrival or the beginning of using of Telephone T is reduced, if the telephone condition detecting element 2 detects use termination of Telephone T, the signal-processing section 4 will perform automatically processing to which sound volume is returned to the condition before the beginning of using of Telephone T. Therefore, even if it is the case where the telephone call has been got during viewing and listening of the television basic function section 3, while the fault to which the voice of the television basic function section 3 becomes obstructive is avoided, even if it is under viewing and listening, it can know having got the telephone call certainly. The character representation function part 14 which displays the reduced voice concerned on the signal-processing section 4 on Screen 13 of the television basic function section 3 in the alphabetic character W on the other hand based on having reduced sound volume is formed. If it is made to display on Screen 13 based on this alphabetic data Dw while changing the reduced sound signal Ssw concerned in the period to which sound volume was reduced into alphabetic data Dw, other viewers who have not appeared in the viewer and telephone in a telephone can check the audio contents by viewing. Furthermore, the storage processing section 15 which memorizes the image data concerning the video signal Svm corresponding to the voice data concerning the reduced sound signal Ssm concerned in the period which reduced sound volume in the signal-processing section 4, and/or the sound signal Ssm concerned, If the regeneration function part 16 which reads the voice data and/or image data which were memorized in the storage processing section 15 concerned, and is reproduced by the television basic function section 3 is formed, it can view and listen to the contents of the voice interrupted in the telephone after telephone termination, and/or the image.

[Translation done.]

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1] The block schematic diagram of the receiving set concerning the suitable example of this invention,
[Drawing 2] The block schematic diagram of the video-signal processing section in this receiving set,
[Drawing 3] The block schematic diagram of the sound signal processing section in this receiving set,
[Drawing 4] The block schematic diagram of the voice-transliteration processing section in this receiving set,
[Drawing 5] The block schematic diagram of the processing decision section in this receiving set,
[Drawing 6] The flow chart for explaining actuation of this receiving set,
[Drawing 7] This receiving set and the external view of remote control,
[Description of Notations]
1 Receiving Set
2 Telephone Condition Detecting Element
3 Television Basic Function Section
4 Signal-Processing Section
11 Telephone Line
12 Line Connection Section
13 Screen
14 Character Representation Function Part
15 Storage Processing Section
16 Regeneration Function Part
T Telephone
W Alphabetic character
Dw Alphabetic data
Ssw Sound signal
Ssm Sound signal
Svm Video signal

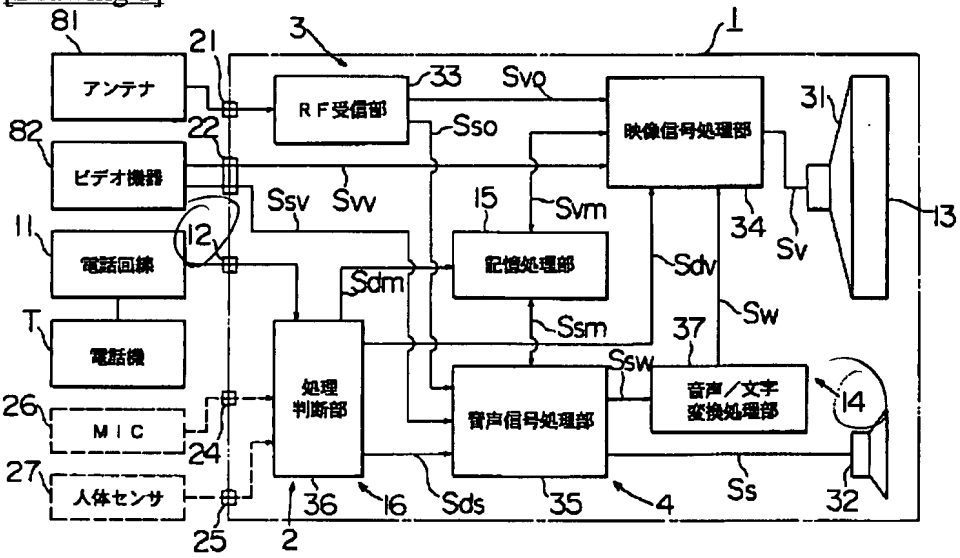
[Translation done.]

* NOTICES *

1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

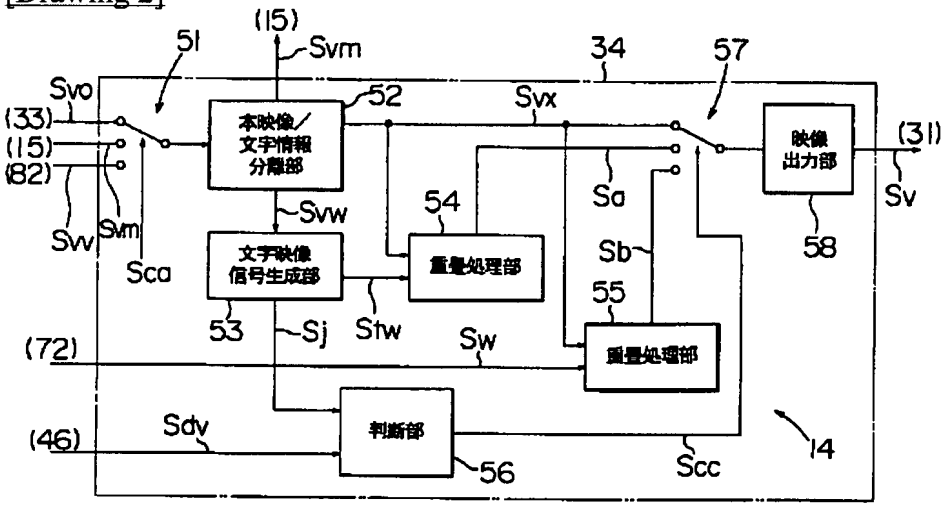
DRAWINGS

[Drawing 1]



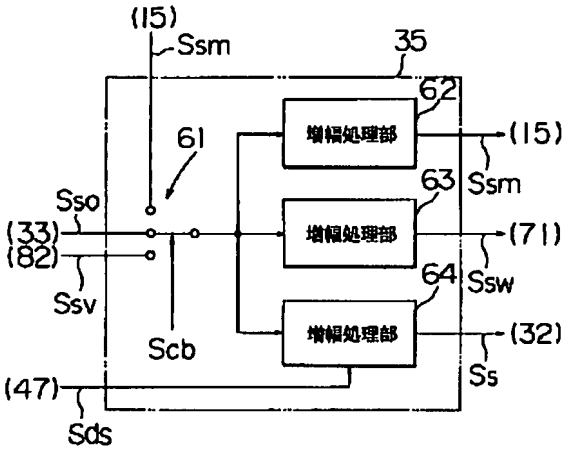
81: Antenna
82: VTR | DVD
11: Telephone line
32: loudspeaker

[Drawing 2]

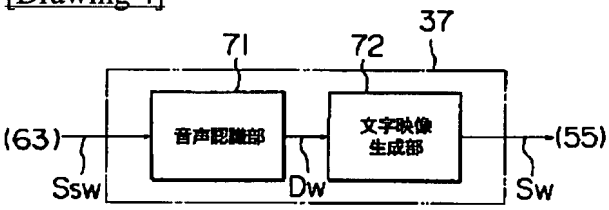


51: Input change over switch

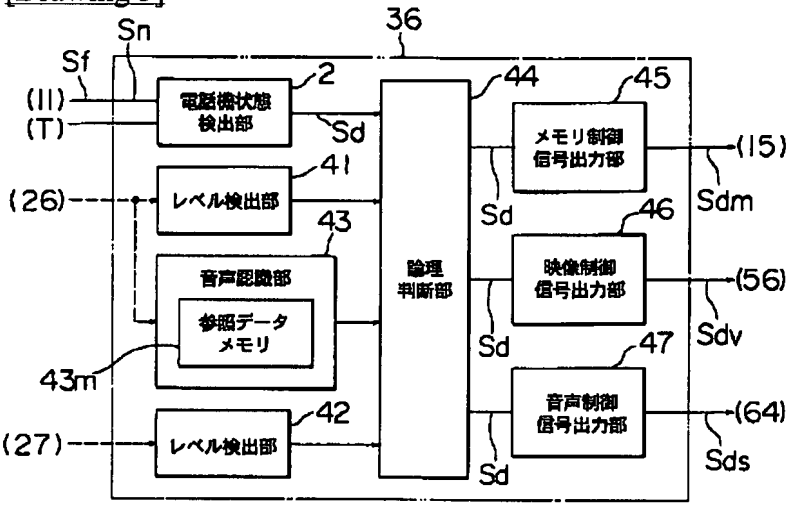
[Drawing 3]



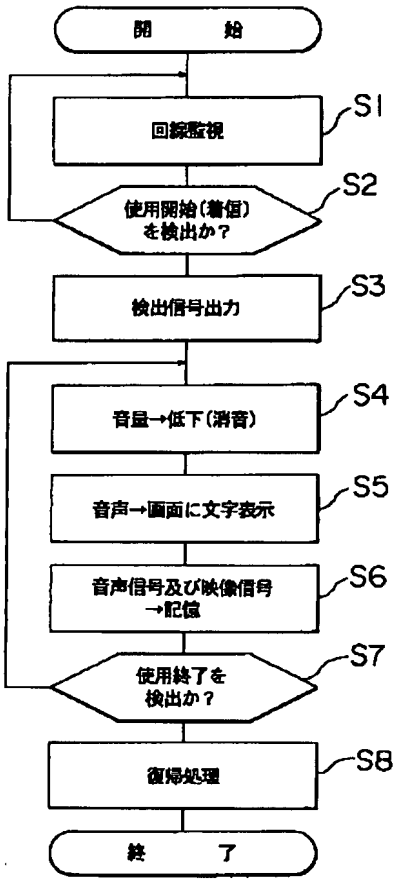
[Drawing 4]



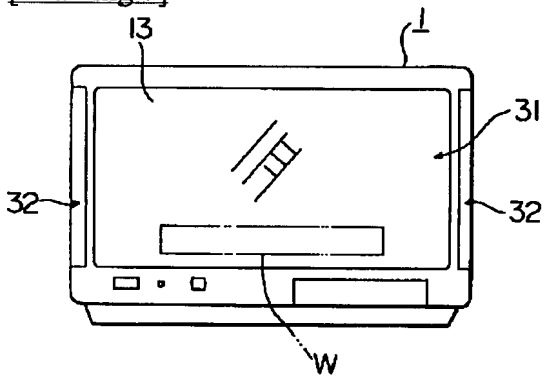
[Drawing 5]

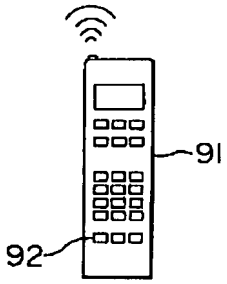


[Drawing 6]



[Drawing 7]





[Translation done.]